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Estado Teste enviado

Data de submissão: quinta, 17 janeiro 2019, 10:49

Tempo gasto 1 hora 43 minutos

Informação

Note: In multiple-choice questions you can choose **more than one** answer. Each wrong answer **deducts** 1/3 of that question grade.

Important: No tools can be used during the exam except for Moodle and the provided cheat-sheets.

Pergunta 1

Respondida Pontuação 0,500

Which one of these elements is **mandatory** in a valid HTML document?

Selecione uma ou mais opções de resposta:

- ☒ a. <title>
- ☐ b. <main>
- ☐ c. <header>
- ☐ d. <meta>

Pergunta 2

Respondida

Pontuação 0,500

Which one of these is the **most correct** way to define text that represents a caption for an input field in HTML?

Selecione uma ou mais opções de resposta:

☐

a.

```
<label>Username: </label><input name="username" type="text">
```

☒

b.

```
<label>Username: <input name="username" type="text"></label>
```

☐

c.

```
<p>Username:</p><input name="username" type="text">
```

☐

d.

```
<p>Username: <input name="username" type="text"></p>
```

Pergunta 3

Respondida

Pontuação 0,500

Which one of these sentences about the *id* attribute in an HTML element is **correct**?

Selecione uma ou mais opções de resposta:

☒a. The *id* must be **unique** and each element can only have **one** *id*.☐b. The *id* can be **repeated** and each element can have **many** *ids*.☐c. The *id* can be **repeated** but each element can only have **one** *id*.☐d. The *id* must be **unique** but each element can have **many** *ids*.

Pergunta 4

Respondida

Pontuação 0,500

Consider the following HTML code:

```
<ul>
  <li>A</li>
  <li>B</li>
  <li>C</li>
  <li>D</li>
</ul>
```

Which one of these selectors selects **just the first** list element?

Selecione uma ou mais opções de resposta:



a.



b.



c.



d.

Pergunta 5

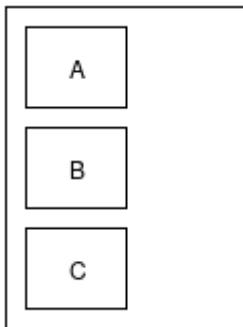
Respondida

Pontuação 0,500

Consider that the result of the following HTML code:

```
<section>
  <div id="a">A</div>
  <div id="b">B</div>
  <div id="c">C</div>
</section>
```

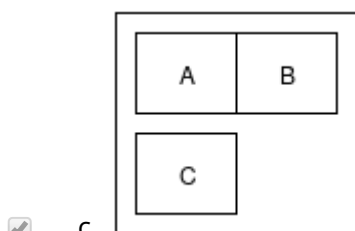
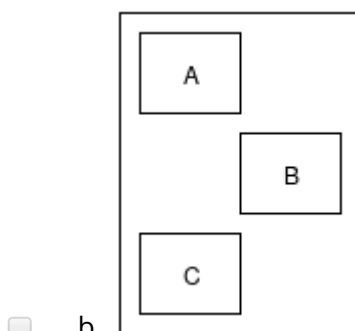
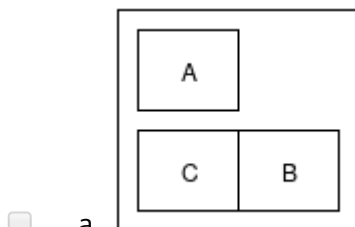
Is depicted in the following image:



What would be the expected result if the following CSS was added to the page?

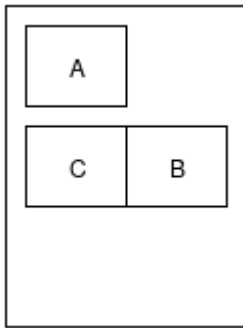
```
#b { float: right }
```

Selecione uma ou mais opções de resposta:



☐

d.



Pergunta 6

Respondida

Pontuação 0,500

Consider the following HTML code:

```
<body>
  ABC
  <div>
    <div>
      DEF
    </div>
  </div>
</body>
```

Which one of the following CSS rules would make the text "DEF" **twice as big** as the text "ABC"?

Selecione uma ou mais opções de resposta:

- ☐ a. div { font-size: 2x }
- ☒ b. div { font-size: 2rem }
- ☐ c. div { font-size: 2em }
- ☐ d. div { font-size: 200% }

Pergunta 7

Respondida

Pontuação 0,500

Consider that you have access to a PHP function that calculates a student's grade given his student number:

```
function calculateGrade($number) {  
    ... // some code  
}
```

This function returns a number between **0 and 20** if the student exists, and **NULL** if he doesn't..

Which one of these is the **correct way** to test if the student exists?

Selecione uma ou mais opções de resposta:

☐ a.

```
function existsStudent($number) {  
    return !(calculateGrade($number) >= 0);  
}
```

☒ b.

```
function existsStudent($number) {  
    return calculateGrade($number) != NULL;  
}
```

☒ c.

```
function existsStudent($number) {  
    return calculateGrade($number) !== NULL;  
}
```

☐ d.

```
function existsStudent($number) {  
    return calculateGrade($number) is NULL;  
}
```

Pergunta 8

Respondida

Pontuação 0,500

What happens when the following command is executed in the middle of a PHP script?

```
...  
header('Location: otherURL.php');  
...
```

Selecione uma ou mais opções de resposta:

- ☒ a. The script sends a "notification" to the browser telling it to load another URL and stops the script execution.
- ☐ b. The PHP script includes another URL and resumes its execution.
- ☒ c. The script sends a "notification" to the browser telling it to load another URL and continues the script execution.
- ☐ d. The PHP script includes another URL and restarts its execution.

Pergunta 9

Respondida

Pontuação 0,500

What's the correct way to declare a variable in *JavaScript*?

Selecione uma ou mais opções de resposta:

- ☐ a. Using the **var** keyword inside functions and **let** for global variables.
- ☒ b. Always using the **let** keyword.
- ☐ c. Using the **let** keyword inside functions and **var** for global variables.
- ☐ d. Always using the **var** keyword.

Pergunta 10

Respondida

Pontuação 0,500

In which kind of HTTP messages can we find HTTP headers?

Selecione uma ou mais opções de resposta:

- ☒ a. In HTTP requests and responses.
- ☒ b. Only in HTTP responses.
- ☐ c. *Headers* are a PHP command, and are not part of the HTTP protocol.
- ☒ d. Only in HTTP requests.

Pergunta 11

Respondida

Pontuação 0,500

One of the ways to prevent CSRF attacks is to use CSRF tokens. How does this mechanism work?

Selecione uma ou mais opções de resposta:

- ☐ a. The CSRF token is stored as a session variable and is checked by the browser against a value sent by the server.
- ☐ b. The CSRF token is generated and stored on the server, sent to the browser inside the HTML code and resent to the server where it is checked.
- ☐ c. The CSRF token is generated and stored on the browser, in a cookie, and is then checked against a token sent by the server.
- ☒ d. The CSRF token is generated by the browser, for each request, and then sent to the server where it is checked.

Pergunta 12

Respondida

Pontuação 0,500

The use of different *salts* for each password, **does not prevent**:

Selecione uma ou mais opções de resposta:

- ☐ a. Attacks using generic rainbow tables.
- ☐ b. Attacks using knowledge about different users using the same password.
- ☒ c. Brute force attacks against weak passwords.
- ☒ d. Attacks using rainbow tables generated for each different *salt*.

Informação

Consider the following HTML excerpt:

```
<section id="foo">
  <ul class="bar">
    <li class="first">A</li>
    <li class="second">B</li>
    <li>C</li>
    <li>D</li>
  </ul>
</section>
```

And the following CSS rules:

```
.bar li { color: green } /* R1 */
section :first-of-type .second { color: yellow } /* R2 */
section#foo {color: blue } /* R3 */
section[id=foo] > * {color: purple } /* R4 */
.bar li.first:first-child + li { color: inherit } /* R5 */
#foo > li.first:first-child ~ li { color: magenta } /* R6 */
```

Using the following notation:

a,b,c,d

For example:

0,2,0,1

Write down the specificity of each rule.

Pergunta 13

Respondida

Pontuação 0,250

What is the specificity of rule R1?

Resposta: 0, 0, 1, 1

Pergunta 14

Respondida

Pontuação 0,250

What is the specificity of rule R2?

Resposta: 0, 0, 2, 1

Pergunta 15

Respondida

Pontuação 0,250

What is the specificity of rule R3?

Resposta: 0, 1, 0, 1

Pergunta 16

Respondida

Pontuação 0,250

What is the specificity of rule R4?

Resposta: 0, 1, 0, 1

Pergunta 17

Respondida

Pontuação 0,250

What is the specificity of rule R5?

Resposta: 0, 0, 3, 2

Pergunta 18

Respondida

Pontuação 0,250

What is the specificity of rule R6?

Resposta: 0, 1, 2, 2

Pergunta 19

Respondida

Pontuação 1,000

Knowing that the default value for the color attribute of the body element is **black**, and that all other elements have color *inherit* by default, what color will the second element in the list (B) have after all rules are applied.

Note: No penalties will be given for wrong answers in this question.

Selecione uma opção de resposta:

- ☐ a. yellow
- ☐ b. magenta
- ☒ c. purple
- ☐ d. green
- ☐ e. black
- ☐ f. blue

Informação

Consider the following string:

A groundhog would hog all the ground he could hog, if a groundhog could hog ground

For each one of the following regular expressions, copy the string and add square brackets around the **first** match. Don't change the string in any other way.

For example, if the regular expression first match is "hog all ", your answer would be:

A groundhog would [hog all]the ground he could hog, if a groundhog could hog ground

If the regular expression doesn't have any match, answer with the original string with no modifications.

Pergunta 20

Respondida

Pontuação 0,500

/g.*g/

Resposta: A [groundhog] would hog all the ground he could hog, if a groundhog could hog gro

Pergunta 21

Respondida

Pontuação 0,500

/ground.+?hog/

Resposta: A [groundhog] would hog all the ground he could hog, if a groundhog could hog gro

Pergunta 22

Respondida

Pontuação 0,500

/(.+)\1/

Resposta: A groundhog would hog a[ll] the ground he could hog, if a groundhog could hog gro

Pergunta 23

Respondida

Pontuação 0,500

/ground(?!hog)/

Resposta: A groundhog would hog all the [ground] he could hog, if a groundhog could hog gro

Pergunta 24

Respondida

Pontuação 0,500

/\w+\$/

Resposta: A groundhog would hog all the ground he could hog,[if a groundhog could hog gro

Pergunta 25

Respondida

Pontuação 0,500

/(\w{3}).*\1/

Resposta: A [groundhog would hog all the gro]und he could hog, if a groundhog could hog gro

Informação

Consider the following HTML code representing a *tic-tac-toe* game played between a human (browser) and a computer (server):

```
<section id="tic-tac-toe" data-id="1234">
  <div class="square"></div>
  <div class="square"></div>
  <div class="square"></div>
  <div class="square">X</div>
  <div class="square">X</div>
  <div class="square">O</div>
  <div class="square"></div>
  <div class="square"></div>
  <div class="square">O</div>
  <p id="state">playing</p>
</section>
```

This same game would be shown, in the browser, to the human player as:

1	2	3
X ₄	X ₅	O ₆
7	8	O ₉

playing

The human player uses the 'X' mark to play and the computer uses the 'O' mark. The human player is always the first to play.

Also, consider that the HTML document can contain other *section*, *div*, and *p* elements.

You do not need to consider any error conditions.

Pergunta 26

Respondida

Pontuação 1,500

Write the code needed for a PHP page (**play.php**) that receives the following POST parameters:

- *id*: The game *id*.
- *position*: An **optional** number, between 1 and 9, representing the move played by the human.

If the *position* parameter **has not been** received, the page should only return the current state (as returned by the *state* function defined below) of the game having the received *id*.

If the *position* parameter **has been** received, the page should execute the human move, execute the computer move and then return the current game state.

Consider that you have access to the following PHP functions in a file named **game.php**:

- `state($id)` - returns the game state for a given *id*. **Example:** `array('state' => 'playing', 'squares' => array(" ", " ", "X", "X", "O", " ", " ", "O"))`
- `play($id, $position)` - executes the human play received as a parameter. If the game hasn't ended yet, also executes a computer move.

The game state should be returned using JSON.

```
include_once 'game.php'
```

Pergunta 27

Não respondida

Pontuação 2,500

Write the *JavaScript* code needed so that when the page is loaded:

- The PHP script defined in the previous question is **called**, using Ajax, with the *id* parameter equal to the current game *id* (*data-id* attribute of the section with *id* 'tic-tac-toe').
- The HTML code is **changed** so that it reflects the state returned by that script (*pieces* and *state*).

You can consider that the script has been loaded using the *defer* attribute.

You can also consider that you have access to the following function:

```
function encodeForAjax(data) {  
  return Object.keys(data).map(function(k){  
    return encodeURIComponent(k) + '=' + encodeURIComponent(data[k])  
  }).join('&')  
}
```



Pergunta 28

Não respondida

Pontuação 2,000

Write the *JavaScript* code needed so that when the human player clicks an empty square:

- The PHP script is called, using Ajax, with the *id* parameter equal to the current game *id* (*data-id* attribute of the section with *id* 'tic-tac-toe') and the parameter *position* equal to the clicked square number (from 1 to 9).
- The HTML code is changed so that it reflects the state returned by that script (*pieces* and *state*).

You can, and should, use any functions defined in the previous question.



Informação

Consider the following XML document:

```
<recipes>
  <recipe difficulty="medium">
    <name>Apple Pie</name>
    <description>A delicious type of pie</description>
    <ingredients>
      <ingredient>Apple</ingredient>
      <ingredient>Butter</ingredient>
      <ingredient>Sugar</ingredient>
      <ingredient>Flour</ingredient>
    </ingredients>
  </recipe>
  <recipe difficulty="low">
    <name>Mixed Toast</name>
    <ingredients>
      <ingredient>Bread</ingredient>
      <ingredient>Ham</ingredient>
      <ingredient>Cheese</ingredient>
    </ingredients>
  </recipe>
</recipes>
```

Also consider that the *context node* is the document *root*. Write the *XPath* expressions that select the following elements:

Pergunta 29

Respondida Pontuação 0,500

The **name** (just the text) of **all** ingredients in the document.

Resposta:

Pergunta 30

Respondida Pontuação 0,500

The **number** of ingredients in the *Mixed Toast* recipe.

Resposta:

Pergunta 31

Respondida

Pontuação 0,500

The **number** of medium difficulty recipes.

Resposta: `//recipes/recipe[count(@difficulty = 'medium')]`

Pergunta 32

Respondida

Pontuação 1,000

The **name** (just the text) of **all** recipes containing *Apple* as an ingredient.

Resposta: `//recipes/recipe/ingredients/ingredient[text() = 'Apple']/../text()`